

**IN THE U.S. PATENT AND TRADEMARK OFFICE**

Application No.: 10/073,931

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Appellants: Bharat Tarachand DOSHI et al.

Group Art Unit: 2873

Examiner: Evelyn A. Lester

Title: METHODS AND DEVICES FOR PROVIDING OPTICAL SERVICED-  
ENABLED CROSS-CONNECTIONS

Attorney Docket: 129250-000950/US

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**APPELLANTS' BRIEF ON APPEAL**

**MAIL STOP APPEAL BRIEF - PATENTS**

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**APPELLANTS' BRIEF ON APPEAL**

**I. REAL PARTY IN INTEREST:**

The real party in interest in this appeal is Lucent Technologies Inc. Assignment of the application was submitted to the U.S. Patent and Trademark Office and recorded at Reel 012591, Frame 0491.

**II. RELATED APPEALS AND INTERFERENCES:**

There are no known appeals or interferences that will affect, be directly affected by, or have a bearing on the Board's decision in this Appeal.

**III. STATUS OF CLAIMS:**

Claims 1-18 are pending in the application, with claims 1, 6 and 11 being written in independent form.

Claims 16-18 remain finally rejected under 35 U.S.C. §112, second paragraph, claims 1, 4-6, 9-11, 14 and 15 remain finally rejected under 35 U.S.C. §102(b) and claims 2, 3, 7, 8, 12 and 13 remain finally rejected under 35 U.S.C. §103(a). Claims 1-18 are being appealed.

**IV. STATUS OF AMENDMENTS:**

A Request for Reconsideration ("Request") was filed on March 21, 2007. In an Advisory Action dated April 6, 2007, the Examiner stated that the Request was considered but did not place the application in condition for allowance.

**V. SUMMARY OF CLAIMED SUBJECT MATTER:**

**(i). Overview of the Subject Matter of the Independent Claims**

The present invention is directed at a device or method for connecting a number of non-dedicated, processing units to a number of Ultra-Long Haul (“ULR”) optical signals. More specifically, independent claim 1 reads as follows (specification citations follow in parenthesis):

**1. A connection device comprising:  
one or more non-dedicated, processing units; and  
an optical switch for receiving Ultra-Long Haul (ULR) optical  
signals and for connecting at least one of the units to one or more of  
the received signals based on a characteristic of each signal.**

(see specification, paragraphs [12], [17], [19], [23], and [27] through [30], for example).

Independent claim 6 reads as follows:

**6. A router comprising:  
one or more non-dedicated, processing units; and  
an optical switch for receiving Ultra-Long Haul (ULR) optical  
signals and for connecting at least one of the units to one or more of  
the received signals based on a characteristic of each signal.**

(see specification, paragraphs [12], [17], [19], [23], and [27] through [30], and [31], for example).

Independent claim 11 reads as follows:

**11. A method for providing an optical, service-enabled  
connection comprising:  
receiving Ultra-Long Haul (ULR) optical signals; and  
connecting at least one of a number of non-dedicated,  
processing units to one or more of the received optical signals based  
on a characteristic of each signal.**

(see specification, paragraphs [12], [17], [19], [23], and [27] through [30], and [31], for example).

In order to make the overview set forth above concise the disclosure that has been included, or referred to, above only represents a portion of the total disclosure set forth in the Specification that supports the independent claims.

**(ii). The Remainder of the Specification Also Supports the Claims**

The Appellants note that there may be additional disclosure in the Specification that also supports the independent and dependent claims. Further, by referring to the disclosure above the Appellants do not represent that this is the only evidence that supports the independent claims nor do Appellants necessarily represent that this disclosure can be used to fully interpret the claims of the present invention. Instead, this disclosure is an overview of the claimed subject matter.

**VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL:**

Appellants seek the Board's review and reversal of the rejection of: (a) claims 16-18 based on 35 U.S.C. §112, second paragraph; (b) claims 1, 4-6, 9-11, 14 and 15 under 35 U.S.C. §102(b) based on Fee et al., U.S. Patent 5,726,788, (hereinafter "Fee"); (c) claims 2, 7 and 12 under 35 U.S.C. 103(a) based on Fee in view of Wong et al., US Patent 6,624,927 (hereinafter "Wong"); and (d) claims 3, 8 and 13 under 35 U.S.C. 103(a) based on Fee in view of Sharma et al. US Patent 6,331,906 (hereinafter "Sharma").

**VII. ARGUMENTS:**

**A. The Section 112, 2nd Paragraph Rejection**

In the Final Office Action the Examiner rejected claims 16-18 under 35 U.S.C. §112, second paragraph. For the benefit of the Board, claim 16 depends

on independent claim 1, claim 17 on independent claim 6 and claim 18 on independent claim 11.

Each of claims 16-18 is similar. For present purposes the Appellants present the text of claim 16 as being illustrative of the claims on appeal:

**16. The device as in claim 1 wherein the at least one unit is selected from the group consisting of:  
a gigabit Ethernet unit, a re-shape and re-amplify without retiming unit ("2R unit"), a re-shape and re-amplify with retiming unit ("3R unit"), a Simple Data Link (SDL) unit and a SONET/SDH unit.**

The Examiner states that it is "unclear what the group elements" in these claims "actually is". Further, the Examiner states that "there appears to be no infused meaning by the grouping of these elements" and that the grouping is confusing in light the elements in other claims. The Appellants respectfully disagree for at least the following reasons.

Each of dependent claims 16-18 contain the phrase: "...wherein the at least one unit is selected from the group consisting of...". Thereafter, each claim presents a selection of a number of non-dedicated, processing units that may be connected to one or more ULR optical signals by the optical switch set forth in the respective, independent claim.

The common feature shared by each of the claimed processing units is that each one is: (a) non-dedicated; and (b) connected by the same switch to one or more ULR optical signals.

As far as Appellants can determine, there is no USPTO rule, BPAI or CAFC decision that requires every type of processing unit to be claimed in one dependent claim. Thus, there is no inconsistency in (or rule prohibiting) setting forth some types of processing units in dependent claims 2-4, 7-10, 12-15 and others in claims 16-18. While a particular processing unit may be excluded from a particular dependent claim, it is not excluded from being claimed separately as the Examiner appears to be suggesting.

**B. The Section 102 Rejections**

Claims 1, 4-6, 9-11, 14 and 15 were rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Fee. Appellants disagree for at least the following reasons.

Appellants respectfully submit that Fee fails to teach or suggest a connection device that comprises an optical switch that receives *ULR optical signals* and connects at least one non-dedicated processing unit to one or more of the received signals based on a characteristic of each signal as in claim 1 and its dependent claims (and similarly, in claims 6 and 11 and its dependent claims).

Instead, Fee is silent with respect to the type of optical signals involved. Further, Appellants believe that Fee is not directed towards ULR signals because it repeatedly discloses the need for amplification of an optical signal by an amplifier 210 before the signal is input into an optical interface 208 or backplane 308 which, in turn, are connected to functional units 302. It is a characteristic of ULR signals that amplification is not always required; the opposite of the signals disclosed in Fee.

The Examiner takes the position that Fee is directed at ULR signals because Fee “addresses the need for keeping the signal strong”. The Appellants note that this a characteristic of many optical networks, not just ULR networks. Even though a ULR network has such a characteristic, this is not the feature that distinguishes ULR networks over non-ULR networks. In sum, the fact the Fee may keep signals strong is no indication that it is directed at ULR signals or networks.

The Examiner also states that the Appellants’ disclosure supports an interpretation that Fee is directed at ULR signals/networks because the instant specification states that “simple amplification” is used in ULR networks. As the Appellants have stated before, while amplification of an optical signal in a ULR

network may sometimes be necessary, it is not always required as are the signals in Fee.

The Examiner's positions notwithstanding, the Appellants respectfully submit that Fee simply is not directed to ULR signals or networks. There is no explicit disclosure of such signals/networks in Fee (as there is in the instant specification) and there is nothing in Fee that would suggest to one skilled in the art that Fee's techniques could be used in ULR networks, unless the required amplification, always used in Fee, is removed. However, such removal would change Fee's principle of operation which is impermissible (see MPEP §2143.01).

Fee also fails to disclose or suggest non-dedicated processing units. Though Fee's functional units 302 can apparently handle more than one optical signal (though that fact is not altogether clear from a reading of Fee), the units appear to be dedicated to a limited set of signals. In contrast, the processing units in the claims of the present invention are not dedicated to any one or more optical signals. Because of this, the claimed processing units can be used to improve the characteristics of hundreds, if not thousands, of optical signals (see the specification, paragraph 28). Further indication that Fee is dedicated to a set number of signals is the statement in Fee that "multiple input/output switches may be built by cascading basic one-by-one switching blocks" (column 5, lines 38-40). Said another way, because the switch 308 is dedicated to a set number of signals/links, additional switches are needed to service other signals/links.

The Examiner takes the position that Fee does disclose non-dedicated processing units because an "optical signal can be routed to any one of the functions or processing units". However, as the Appellants' have explained before, the specification uses the words "non-dedicated" to mean not dedicated to a single link. The fact that a dedicated set of links in Fee may be connected to any one of its dedicated functional blocks does not make the blocks "non-



dedicated” because these blocks can only be used with a limited set of signals. Though Examiners may interpret claims broadly, any interpretation must be consistent with the specification. *In re Hyatt*, USPQ2d 1664, 1667 (Fed.Cir. 2000). Here, the Examiner’s present interpretation is inconsistent with the specification because Fee discloses dedicated functional blocks, not non-dedicated processing units.

Because Fee does not teach each and every feature of the claimed inventions, Fee cannot provide a basis for a rejection under 35 U.S.C. §102.

Accordingly, Appellants request that the members of the Board reverse the decision of the Examiner and allow claims 1, 4-6, 9-11, 14 and 15.

**C. The Section 103 Rejections**

Claims 2, 7 and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fee in view of Wong. Claims 3, 8 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fee in view of Sharma. Appellants respectfully disagree for at least the following reasons.

Claims 2, 3, 7, 8, 12 and 13 are allowable at least because these claims depend from allowable claims 1, 6 and 11 for the reasons set forth above.

**(i) Claims 2, 7 and 12**

Further, with respect to claims 2, 7 and 12 the Examiner acknowledges that Fee does not disclose a Raman pump processing unit. To make up for this deficiency the Examiner relies upon Wong.

While Wong may disclose some type of Raman pump, the device in Wong is also dedicated to a particular signal or signals. Thus, the most that the combination of Fee and Wong disclose is the use of a dedicated Raman pump, not a non-dedicated one, as in claims 2, 7 and 12.

Accordingly, Appellants request that the members of the Board reverse the decision of the Examiner and allow claims 2, 7, and 12.

**(ii) Claims 3, 8 and 13**

Yet further, with respect to claims 3, 8 and 13 the Examiner acknowledges that Fee does not disclose an optical-to-electrical –to-optical converter (OEO) as in claims 3, 8 and 13. To make up for this deficiency the Examiner relies upon Sharma.

While Sharma may disclose some type of OEO, the OEO in Sharma is also dedicated to a particular signal or signals. Thus, the most that the combination of Fee and Sharma disclose is the use of a dedicated OEO, not a non-dedicated one, as in claims 3, 8 and 13.

Accordingly, Appellants request that the members of the Board reverse the decision of the Examiner and allow claims 3, 8 and 13.

**Conclusion:**

Appellants respectfully request that the members of the Board reverse the decision of the Examiner and allow claims 1-18.

The Commissioner is authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-3777 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,  
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**VIII. CLAIMS APPENDIX**

1. A connection device comprising:  
one or more non-dedicated, processing units; and  
an optical switch for receiving Ultra-Long Haul (ULR) optical signals  
and for connecting at least one of the units to one or more of the received signals  
based on a characteristic of each signal.
2. The device as in claim 1 wherein the at least one unit  
comprises a Raman pump.
3. The device as in claim 1 wherein the at least one unit  
comprises an optical-to-electrical-to-optical regenerator.
4. The device as in claim 1 wherein the at least one unit  
comprises a dispersion equalization/compensation unit.
5. The device as in claim 1 where the at least one unit comprises  
a performance monitor.
6. A router comprising:  
one or more non-dedicated, processing units; and  
an optical switch for receiving Ultra-Long Haul (ULR) optical signals  
and for connecting at least one of the units to one or more of the received signals  
based on a characteristic of each signal.
7. The router as in claim 6 wherein the at least one unit  
comprises a Raman pump.
8. The router as in claim 6 wherein the at least one unit  
comprises an optical-to-electrical-to-optical regenerator.
9. The router as in claim 6 wherein the at least one unit  
comprises a dispersion equalization/compensation unit.
10. The router as in claim 6 wherein the at least one unit  
comprises a performance monitor.

11. A method for providing an optical, service-enabled connection comprising:

receiving Ultra-Long Haul (ULR) optical signals; and  
connecting at least one of a number of non-dedicated, processing units to one or more of the received optical signals based on a characteristic of each signal.

12. The method as in claim 11 wherein the at least one unit comprises a Raman pump.

13. The method as in claim 11 wherein the at least one unit comprises an optical-to-electrical-to-optical regenerator.

14. The method as in claim 11 wherein the at least one unit comprises a dispersion equalization/compensation unit.

15. The method as in claim 11 wherein the at least one unit comprises a performance monitor.

16. The device as in claim 1 wherein the at least one unit is selected from the group consisting of:

a gigabit Ethernet unit, a re-shape and re-amplify without retiming unit ("2R unit"), a re-shape and re-amplify with retiming unit ("3R unit"), a Simple Data Link (SDL) unit and a SONET/SDH unit.

17. The router as in claim 6 wherein the at least one unit is selected from the group consisting of: a gigabit Ethernet unit, a 2R unit, a 3R unit, a SDL unit and a SONET/SDH unit.

18. The method as in claim 11 wherein the at least one unit is selected from the group consisting of: a gigabit Ethernet unit, a 2R unit, a 3R unit, a SDL unit and a SONET/SDH unit.

**IX. EVIDENCE APPENDIX**

None.

**X. RELATED PROCEEDINGS APPENDIX**

None.